MONTHLY WEATHER REVIEW.

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INTRODUCTION.

This REVIEW contains a general summary of the meteorological conditions which prevailed over the United States and Canada during September, 1885, based upon the reports from the regular and voluntary observers of the Signal Service and from co-operating state weather services.

Descriptions of the storms which occurred over the north Atlantic Ocean during the month are also given, and their approximate paths shown on chart i.

On the chart for this month are traced the paths of the centres of seven cyclonic areas; the average number for September during the last thirteen years being 9.4. The area described as ii developed great energy during its passage over the Lake region on the 8th and 9th, causing great damage to shipping interests, particularly on the upper lakes; and violent local storms and tornadoes occurred in Indiana, Michigan, and Ohio during the afternoon and evening of the 8th. The area described as number v was the severe hurricane on the Texas coast from the 15th to the 20th, whose centre remained nearly stationary, and which afterwards moved northeasterly along the Atlantic coast until its union with cyclonic area number vi near Eastport, Maine, on the morning of the 23d. This union was one of the remarkable features of the month.

The monthly mean temperatures were about normal in the southern districts east of the Rocky Mountains; they were slightly above the normal in the Rocky Mountain regions and on the Pacific coast; and below the normal from the upper Mississippi River eastward to the Atlantic coast.

In connection with the monthly precipitation, the most important feature is the very large excess over the average in the Gulf States, the rainfall being heaviest on the Texas coast in the vicinity of Galveston, where it amounted to 26.01 inches, or about one-half of the annual average for the last thirteen years. Marked deficiencies occurred in the middle Atlantic states, New England, the upper lake region, and extreme northwest.

The weather over the north Atlantic Ocean during the month was rough and unsettled; but few icebergs were observed in the route of trans-Atlantic steamers.

In the preparation of this REVIEW the following data, received up to October 20, 1885, have been used, viz., the regular tri-daily weather-charts, containing data of simultaneous observations taken at one hundred and twenty-nine Signal Service stations and seventeen Canadian stations, as telegraphed to this office; one hundred and seventy-nine monthly journals, one hundred and seventy-three monthly means from the former, and seventeen monthly means from the latter; two hundred and seventy monthly registers from voluntary observers; forty-four monthly registers from United States Army post surgeons; marine records; international simultaneous observations; marine reports through the co-operation of the "New York Herald Weather Service;" abstracts of ships' logs, furnished by the publishers of "The New York Maritime Register;" monthly weather reports from the New England Meteorological Society, and from the local weather services of Alabama, Georgia, Indiana, Iowa, Minnesota, Missouri, Nebraska, Ohio, and Tennessee, and of the Central Pacific Railway Company; trustworthy newspaper extracts, and special reports.

ATMOSPHERIC PRESSURE.

[*Expressed in inches and hundredths.*]

The mean atmospheric pressure for September, 1885, determined from the tri-daily telegraphic observations of the Signal Service, is shown by the isobarometric lines on chart ii.

The mean pressure is greatest over the Ohio Valley and middle Atlantic states, and least over the middle and southern Rocky Mountain regions. The isobar for 30.05 incloses the area of greatest pressure; and that for 29.8 incloses the area of least pressure. The highest barometric mean reported from Signal Service stations is 30.08, for Washington City and Norfolk, Virginia; the lowest is 29.79, for Fort Thomas, Arizona.

Compared with the mean pressure for the preceding month, there has been a decrease along the Gulf coast; also in the south Pacific coast region and along the northern boundary of the country from Minnesota westward to the Pacific coast. The largest deficiencies are, as follows: Port Angeles, Washington Territory, .09; Olympia, Washington Territory, and San Diego, California, .07; and Saint Vincent, Minnesota, .06. In all other districts the mean pressure is greater than for August, the excess ranging from .05 to .10 over the central Rocky Mountain districts, and over the greater part of the country to the east of the Mississippi River and north of the thirty-fifth parallel.

The departures from the normal pressure at the various Signal Service stations are given in the table of miscellaneous meteorological data, and on chart iv they are exhibited by lines connecting stations of equal departure. The mean pressure for September, 1885, is normal, or slightly above the normal, over the central Ohio valley and portions of the middle and south Atlantic states; it is also normal or above at scattering stations in the middle and southern Rocky Mountain regions. In all other districts the mean pressure is below the normal. The deficiencies nowhere exceed .09, and except in the Gulf States, north and south Pacific coast regions, at Mackinaw City, Michigan, and Eastport, Maine, where they range from .05 to .09, they are less than .05.

MONTHLY BAROMETRIC RANGES.

The monthly barometric ranges at Signal Service stations are also shown in the table of miscellaneous meteorological data. They were greatest in New England, and least over the southern parts of the country. The greatest and least monthly ranges are, respectively, 1.61, at Eastport, Maine, and .18, at Brownsville, Texas.

ANTI-CYCLONIC AREAS.

Seven of these areas crossed the country during the month; all, except numbers iii and vii, appeared first in the north Pacific coast region and crossed the mountains; all preserved the usual course, and only one, number vi, exhibited very great energy.